

10/516731

516731

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 December 2003 (18.12.2003)

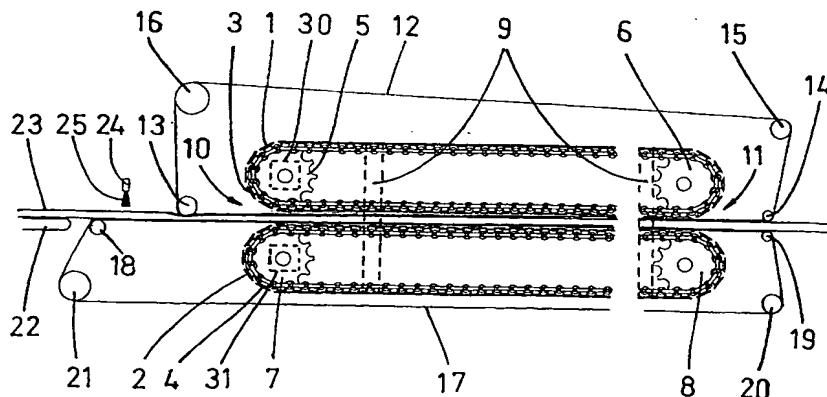
PCT

(10) International Publication Number
WO 03/103922 A1

- (51) International Patent Classification⁷: B29C 44/32, (81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (21) International Application Number: PCT/FI03/00442
- (22) International Filing Date: 4 June 2003 (04.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 20021078 5 June 2002 (05.06.2002) FI
- (71) Applicant (*for all designated States except US*): FASEC OY [FI/FI]; Kiviahontie 10, FIN-70820 Kuopio (FI).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): BLOMQVIST, Mikael [FI/FI]; Kontti 2 B, FIN-02130 Espoo (FI). MOON, David [GB/US]; 8 Seven Ash Green, Springfield, Chelmsford CM1 7 SE, MISSOURI (US).
- (74) Agent: KOLSTER OY AB; Iso Roobertinkatu 23, P.O. Box 148, FIN-00121 Helsinki (FI).
- (84) Designated States (*regional*): ARIPO utility model (GH), ARIPO patent (GH), ARIPO utility model (GM), ARIPO patent (GM), ARIPO utility model (KE), ARIPO patent (KE), ARIPO utility model (LS), ARIPO patent (LS), ARIPO utility model (MW), ARIPO patent (MW), ARIPO utility model (MZ), ARIPO patent (MZ), ARIPO utility model (SD), ARIPO patent (SD), ARIPO utility model (SL), ARIPO patent (SL), ARIPO utility model (SZ), ARIPO patent (SZ), ARIPO utility model (TZ), ARIPO patent (TZ), ARIPO utility model (UG), ARIPO patent (UG), ARIPO utility model (ZM), ARIPO patent (ZM), ARIPO utility model (ZW), ARIPO patent (ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR MAKING PLATE-LIKE FIBER-REINFORCED PRODUCTS



(57) Abstract: A method for making a plate-like fibre-reinforced product to be used as building or packing material, the method comprising: placing fibres on a lower laminate; applying a binding agent on the fibres so that the fibres are surrounded by the binding agent; transferring the fibres with binding agent between the lower laminate and an upper laminate between lower and upper rotating pressing plates (4, 3); allowing the binding agent to foam up, expand and harden between the upper and lower pressing plates. In order to economically manufacture such a product with desired physical and mechanical properties, the method comprises the steps according to which the fibres are made into a three-dimensional cohesive fibre mat of fibres bound together, the fibre mat having a moisture content of 5% at the most before the binding agent is applied onto the fibre mat, the binding agent is applied onto the fibre mat and the obtained mixture is subjected to a pressure of at least 0.8 bar and 5 bar at the most and is allowed to harden to a plate-like product having a thickness of 10 to 150 mm; and the lower and upper laminate are removed from the hardening product. The invention also relates to a manufacturing apparatus and a plate-like product.

WO 03/103922 A1